

## ABSTRACT

The present invention relates to a method for enhancing levels of polyunsaturated fatty acids in thraustochytrid protists and more particularly to a method of enhancing levels of docosahexaenoic acid and eicosapentaenoic acid in cells of thraustochytrid protist belonging to the genera *Schizochytrium*, *Thraustochytrium* and *Aplanochytrium* deposited at The Microbial Type Culture Collection (MTCC), Institute of Microbial Technology, Chandigarh, India under the accession numbers MTCC 5121, MTCC 5122 and MTCC 5123 respectively by growing the same in a medium with increased viscosity, whereby the cells thus enriched in the said polyunsaturated fatty acids (PUFAs) can then be utilized successfully in various beneficial applications that require polyunsaturated fatty acids, such as in animal feeds, human nutrition and extraction of the PUFAs for nutritional supplementation.